

# SHUAI ZHOU

Junior undergraduate student, South China University of Technology, Guangzhou, China  
davidzhou718@gmail.com — Homepage

## RESEARCH INTERESTS

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Robotics, Motion Planning, Multi-agent Systems

## EDUCATION

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**South China University of Technology**, Guangzhou, China  
Bachelor of Engineering in Robotics

Sep 2022 — Jun 2026 (Expected)  
Cumulative GPA: 3.84/4.00, Rank: 3/56

Core curriculum: Artificial Intelligence Technology and Application, Machine Vision and Sensing Systems, Mechanic, Introduction to Engineering, Data Structure and Algorithm

**University of California, Berkeley**, Berkeley, United States  
Visiting Student in EECS

Aug 2023 — Dec 2023  
Cumulative GPA: 4.00/4.00

Core curriculum: Data Structures, Designing information devices and Systems I, Introductory Physics II and Introduction to Solid Mechanics

## ACADEMIC EXPERIENCE

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**RAP Lab, UM-SJTU Joint Institute, Shanghai Jiao Tong University**  
*Research Intern — supervised by Prof Zhongqiang Ren*

Shanghai, China  
Apr 2024 — Present

- Research in Multi agent system & Motion planning.
- Specifically in developing planning algorithms for Multi agent Path finding with Asynchronous Actions (MAPF-AA).
- One paper is accepted to **AAAI-2025**.

## PUBLICATIONS

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**Loosely Synchronized Rule-Based Planning for Multi-Agent Path Finding with Asynchronous Actions**

Shuai Zhou, Shizhe Zhao, Zhongqiang Ren

— Accepted by **AAAI-2025**

- Main Contributions: A rule-based planner named LSRP was proposed to quickly find feasible solutions for MAPF-AA which is variant of MAPF, utilizing preset rules to achieve scalability that is an order of magnitude higher than existing algorithms. In traditional MAPF, both time and space are discrete, but as the number of agents increases, the dimensionality curse arises. By transforming the NP-hard MAPF into MAPF-AA, where free time becomes continuous and the search dimension doubles, LSRP effectively addresses these challenges.

## SKILLS

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- **OS:** Windows, Linux(Ubuntu)
- **Programming Languages:** Python, C/C++, Java, HTML, MATLAB
- **Version Control:** Git
- **Writing:** L<sup>A</sup>T<sub>E</sub>X, Office
- **Languages:** Chinese (native), English (fluent)
- **Additional Courses**
  - CMU: 10301/601 Introduction to Machine Learning
  - CMU: 16-782 Planning and Decision-making in Robotics
  - Coursera: Robotics: Computational Motion Planning
  - Coursera: Robotics: Aerial Robotics

## REFERENCES

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**Prof. Zhongqiang Ren**

*Assistant Professor, UM-SJTU Joint Institute, Shanghai Jiao Tong University, Shanghai, China*  
E-mail: zhongqiang.ren@sjtu.edu.cn, Department Profiles: UM-SJTU Joint Institute - Profile